



July 25, 1997

CALFED Bay-Delta Program  
1416 Ninth Street, Suite 1155  
Sacramento, California 95814

Dear CALFED Proposal Review Committee:

Please find enclosed ten copies of our 1997 Category III proposal titled Napa River Watershed Stewardship.

Thank you for your time and consideration.

Sincerely,

Dennis Bowker  
Resource Conservationist

DWR WATERSHED  
97 JUL 28 PM 12:48

I. Executive Summary

DNR WAREHOUSE

Project Title: Napa River Watershed Stewardship

97 JUL 29 PM 12:48

Applicant Name: Napa County Resource Conservation District

Project Description and Objectives: This project proposal is intended to address a broad range of ecological and biological values in the Napa River watershed, including steelhead and salmon populations, and improved wetlands and floodplain functions. Program objectives are to implement the recommendations listed in the Napa River Watershed Owner's Manual, a framework for integrated watershed management of the Napa River watershed. Specifically, this program will address the first six of the nine listed objectives of the management plan: 1) *Stabilize streams using natural processes*, 2) *Promote contiguous habitat*, 3) *Increase biological diversity*, 4) *Increase migratory and resident fish habitat*, 5) *Coordinate natural resource protection and planning*, and 6) *Encourage local land Stewardship*.

The proposal is presented in three separable, but mutually supportive segments designed to restore ecological health to the Napa River watershed. The first is expansion of locally based *Stewardship Watershed Management* of the tributary watersheds to the Napa River. The second segment involves support for those Stewardship groups through *Watershed Monitoring and Computer Modeling* of watershed functions. The third segment is to provide direct support for implementation of *Riparian Corridor and Aquatic Habitat Restoration and Management* that includes demonstration sites to encourage restoration expansion, cost sharing to assist with floodplain and spawning habitat restoration, and levee setbacks to attenuate flood damages while improving the natural biological support of floodplain and riparian habitats.

Approach/Tasks/Schedule: The approach to execution of the projects is Stewardship Watershed Management developed at the Napa County Resource Conservation District. The approach emphasizes broad stakeholder involvement; consensus management using interest-based planning; results-based (as opposed to procedure-based) success criteria; and extensive monitoring coupled with flexible management that responds to monitoring feedback. The tasks and their timelines described under each of the three proposal segments (*Stewardship Watershed Management*, *Watershed Computer Modeling and Monitoring*, and *Riparian Corridor and Aquatic Habitat Restoration*) are intended to support the establishment of locally led environmental management that is self-sustaining and coordinated through the uniform guidance of the community's Watershed Owner's Manual. This proposal package describes and requests funding for the first year of a three-year effort.

Justification for Project and Funding by CALFED: This program will enhance and restore the following CALFED priority habitats in the Napa River watershed: seasonal wetland and aquatic habitat, instream aquatic habitat, and shaded riverine aquatic habitat. It will do so through development of local partnerships to encourage long-term effective habitat management while reducing conflicts related to those resources. Primary species of concern benefiting from this program are steelhead trout, splittail, Delta smelt, green sturgeon, striped bass, and migratory birds. Currently, habitat for these species is severely degraded due to alterations in stream

channel morphology, removal of freshwater and tidal wetlands, and excessive erosion and sediment in the system.

Costs and Third Party Impacts: The proposed program is divided into three separable elements that are intended to support one another. The total anticipated first-year cost of this program is \$682,380, of which the amount requested from CALFED is \$347,200. The remaining \$335,180 will be supplied by the participant and collaborators as matching funds. This is intended as a three-year program, with the second and third years together totaling an additional \$594,000. No third party impacts requiring mitigation are expected with this program.

Applicant Qualifications: The Napa County Resource Conservation District has been operating since 1945 to assist local landowners with natural resource conservation in the District. Employees listed in the proposal are trained in the use of computer modeling, database management, GIS, volunteer monitoring training and organization, landscape architecture, and watershed stewardship facilitation. The District has developed a training program for other agencies and groups that provides consultation and education in developing and maintaining effective watershed management programs. Among the grants successfully carried out by the District are the following: Dept. of Pesticide Regulation Integrated Pest Management Grant (1997), EPA 205(J) planning grant for Huichica Creek Management Plan (1995), EPA 319 grant for creation of a watershed stewardship program and Napa River Watershed Owner's Manual (1994).

Monitoring and Data Evaluation: The District has an established monitoring program with protocols, training, and both a relational and GIS database. It has a strong cooperative relationship with regional monitoring programs such as the San Francisco Estuary Institute and the Coyote Creek Riparian Station. The protocols and database already in use will be extended as appropriate to provide tools for the monitoring of restoration projects. Data will be reviewed and evaluated by the District and cooperators on an on-going basis as well as annually by a team comprised of local interest groups and agency personnel. Data will be made available for general distribution through the next edition of the Owner's Manual and via digital formats.

Local Support and CALFED Compatibility: The local community has expressed support for the restoration and maintenance of the ecological health of the Napa River watershed in a variety of ways, including active participation in the creation of the Owner's Manual and the Community Coalition for Floodplain Management, and through votes to establish an erosion control ordinance and parcel tax for watershed management. The District works formally and informally with community partners of varied interests who desire to protect and preserve water quality, aquatic and riverine habitats, and the species they support: the Napa Sustainable Winegrowing Group, Pierce's Disease Task Force, Friends of the Napa River, Napa/Solano Audubon Society, Redwood Ornithological Society, California Dept. of Fish and Game, Napa Valley Steelhead, City and County of Napa, local stewardships and individual landowners, and numerous other state and federal agencies.

## II. Title Page

**Project Title:** Napa River Watershed Stewardship

**Applicant:** Napa County Resource Conservation District  
1303 Jefferson Street, Suite 500B  
Napa, CA 94559  
(707) 252-4188

FAX: (707) 252-4219

102223.2012@compuserve.com

Project Manager/Contact: Dennis Bowker

**Type of Organization:** Local Government, Special District formed under Division IX of the California Public Resources Code.

**Tax Identification Number:** 94-1569332

**Technical Contact:** Dennis Bowker, Project Manager (same address as above)

**Financial Contact:** Ginny Eddings, District Secretary (same address as above)

**Participants and Collaborators:**

Participants:

Napa County Resource Conservation District

Collaborators:

Local Stewardship Watershed Groups  
Napa County Agricultural Commissioner  
Napa Sustainable Winegrowing Group  
California Department of Fish and Game  
California Department of Conservation  
Napa County Flood Control and Water Conservation District  
Pierce's Disease Task Force  
US Environmental Protection Agency  
Region II Water Quality Control Board  
Private landowners  
California Conservation Corps

**RFP Project Group Type 3:** Services (All construction in this proposal will be accomplished by landowners on their own land; District will furnish guidance and financial participation only. No contracts with third parties are anticipated as part of the execution of this program.)

### III. Project Description

a. **Project Description and Approach:** This project is intended to extend the implementation of the recommendations included in the Napa River Watershed Owner's Manual (see Appendix for summary), a framework for watershed management in the Napa River Basin. It will address the issues of habitat degradation and depressed populations of steelhead, Delta smelt, splittail, green sturgeon, and striped bass in the Napa River and Marsh, and will enhance and expand riparian, riverine, estuarine, and freshwater aquatic habitats for these species. It will provide services to project collaborators in the form of training, education, computer-assisted design and modeling of enhancement projects, and financial assistance for implementation. It will also provide training in specific project monitoring as well as general watershed monitoring to be included in the database and GIS at the Resource Conservation District (District). Services will be delivered through work with existing and new local tributary Stewardship groups throughout the Napa Valley, and one group in the upper Putah Creek watershed.

The approach to implementation is the Stewardship Watershed Management approach developed by the District. It relies on a large degree of participation by landowners and residents of tributary and main stem regions. The Stewardship process has been very successful in developing and supporting local responsibility for natural resource management, with a heavy emphasis on monitoring and adaptive management of the resources based on monitoring feedback. The process has received national recognition, including commendation by the US Senate and the California Legislature. Planning is done using interest-based consensus, with implementation from a wide variety of partners that may vary from one specific project to another. Watershed education exchange typically takes place through existing groups such as neighborhood associations, service clubs, trade groups, and school-related organizations. Project implementation is typically done by the landowner, whether public or private, with support from the District, rather than by the District on behalf of the landowner.

b. **Geographic Boundaries of Project:** This project will primarily address the Napa River watershed, from Mt. St. Helena to Carquinez Strait, in Napa County and Solano County, all within the boundaries of the District (Figures 1 and 2). In addition, startup support will be made available to support work on the Putah Creek section above Lake Berryessa inside the District, in partnership with the North Coast Natural Area initiative begun by the Homestake Mining Company and the Cache-Putah Ecological Management Program led by the University of California, Davis.

c. **Expected Benefits:** This project will provide benefits to water quality in the Napa River and estuary, and in San Pablo Bay. It will increase tidal seasonal floodplain freshwater wetland habitat in the Huichica Marsh and in tributary streams to the Napa River. It will also provide improvements in instream and shaded riverine aquatic habitats in a minimum of one-third of the tributary streams and selected reaches of the Napa River upstream of the City of Napa. The project will also provide improvement in sediment balance in the watershed, with accompanying geomorphic stabilization of streams and riparian corridor vegetation diversity and extent. Indirect benefits expected will be lower maintenance costs for riparian landowners and managers, increased open space, and increased property values for neighbors.

Through habitat enhancement and expansion, the program will increase available spawning, feeding and sheltering habitat for steelhead; and improve rearing and feeding habitat for splittail, green sturgeon, striped bass, and Delta smelt. Improved riparian corridor and floodplain wetlands are also expected to benefit resident and migratory avian species of concern, as well as the endangered California freshwater shrimp.

d. Background and Biological/Technical Justification: The Napa River has been on a recovery path since its low point in the 1960's, when the last of the native salmon were extirpated from the system by severe water pollution and habitat destruction. Steelhead trout have survived as a remnant population of two hundred (from an estimated run of 6,000) that is presently in need of higher quality and more extensive spawning areas for recovery to a significant population. A nascent population of fall run Chinook salmon have taken up residence in the watershed in those few areas available for spawning. These fish are "strays" from hatchery releases in Carquinez Strait, where they were released to avoid the pumps in the Delta, but are thought by some to have the capacity to re-establish a local population of limited number if sufficient survival rates can be maintained for at least a decade. Whereas the chemical and wastewater pollution of earlier years has been effectively dealt with, excess sediment supply is still a critical stressor on the salmonid population, as it is also to the spawning and rearing areas of the River in the estuarine zone upstream of San Pablo Bay, populated by Delta smelt, splittail, green sturgeon, and striped bass. The River has been prioritized as an impaired water body by the U.S. EPA and the Region II Water Quality Control Board because of the sediment production. The excess sediment generated in the watershed suffocates spawning areas, fills deep pools, increases turbidity in the stream and estuary, carries with it nutrients that bring significant algal blooms during the summer and fall, and changes the morphological balance of the streams and River toward more unstable conditions.

"Levee wars" that started in the last century have culminated in a river system with a chaotic mix of river control mechanisms along the length of the River, and in some of the tributaries. Both private and public diversions and levees have been constructed, the accumulated effect of which is to constrain the river and its riparian corridor to approximately one third of its optimum morphological width for much of its length. The Napa Valley has also been extensively drained in the last century, eliminating nearly all of the sloughs and extensive wetlands that once covered the Valley floor. Combined with increasing agricultural and urban development, the narrowed channel and loss of wetlands has greatly changed the River and its major tributaries. It now regularly scours extensively on both bed and banks, generating large amounts of sediment that settle in the lower River and estuary, only to be stirred and moved by the tides during the dry season. Removal of tidal wetlands in the lower river by dike construction in the past 70 years has resulted in a much smaller area to disperse the sediment, exacerbating losses in all types of riverine and estuarine-related complex habitats in the system. Dredging in the lower reaches combined with hydrograph and channel alterations has caused the Napa River at Oak Knoll to incise over ten feet since 1965, separating the River from its former floodplain. Additional excess sediment is generated by other human activities away from the channels: the development of roadside ditches, unsurfaced roadways, and recreational trails; construction; agriculture; and wildfire. While much attention has been given to the 11% of the watershed now in winegrapes, relatively little assistance has been available to address the other 89% of the watershed. In cooperation with landowners, this project will restore portions of the Napa River and reduce erosion and sedimentation through demonstration projects in which levees will be removed and floodplain functions restored. Watershed practices that will reduce erosion and sedimentation from upland sources will also be demonstrated.

The Napa River watershed community, under the leadership of the District, generated a watershed management plan published as the Napa River Watershed Owner's Manual (see Appendix). The plan establishes nine objectives to attain the goal of maintaining a sustainable river ecosystem: *promote stream stabilization using natural processes; promote contiguous habitat; increase biological diversity; increase migratory and resident fish habitat; coordinate natural resource protection and planning efforts; encourage land stewardship; reduce soil erosion; promote sustainable land use*

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*concepts; and promote and improve water management.* To date, the community has enacted an innovative erosion control ordinance for all land disturbance over 5% slope, created a parcel tax for watershed management, formed a Community Coalition for Floodplain Management, moved toward wetlands enhancement with treated wastewater, formed the Napa Sustainable Winegrowing Group, and formed a cooperative Water Coalition to address groundwater and surface water supplies.

e. **Proposed Scope of Work:** The three related, but separable portions of this project are as follows, separated as different tasks, with deliverable products listed after each task. The tasks are ongoing, and will be continued through Phase 2 for an additional two-year period. Funding applied for in this proposal is for the first year only, with subsequent proposals to be made after adjustments from Phase I responses. Each task will include a quarterly progress report highlighting successes and making recommendations to improve areas that are not working well. All portions of the project will be carried out interactively; modeling and monitoring will continue even as demonstration restoration projects are carried out.

**Task I. Stewardship Watershed Management.** The services generated under this segment will address system stress brought about by flow alterations, floodplain changes, channel form changes, elevated water temperature, degraded water quality, undesirable species, undesirable effects of land use practices, and human disturbance in aquatic systems.

**Task Ia:** Expand the existing District support for local watershed planning and management by providing direct facilitation and organization help to tributary watershed groups. Increase the number of active stewardships from the existing 10 to at least 16 tributaries of the 48 major inflows to the Napa River, plus one for the upper reaches of Putah Creek watershed above Lake Berryessa.

**Task Ib:** Provide training to at least one member of each new tributary group in group organization skills, fund raising to help the group become self-supporting, information exchange such as newsletters, meeting management, and project management. This training is in addition to the training available in Task Ic.

**Task Ic:** Provide training in watershed evaluation and monitoring to the Stewardship groups. Training will include stream classification; physical stream channel surveying and stream discharge data gathering and assessment based on fluvial geomorphology concepts; watershed permeability and runoff assessment; riparian habitat assessment and fish habitat surveying based on the Dept. of Fish and Game protocol; and water quality and temperature monitoring.

**Task Id:** Additional training sessions and follow-up support will be given in implementation techniques for floodplain restoration, exotic species eradication and replacement, aquatic and riparian habitat restoration, and stream bank stabilization methods. These training sessions will be open to all interested parties in the watershed, including county, municipal, and other agency personnel.

**Products:** *Watershed parcel ownership and mailing lists, with initial mailer (month 3); meeting agendas and responsiveness summaries for initial meetings (month 5); training schedules and summaries, with attendance lists (month 6-10); minimum of six draft or concept tributary management plans (month 12); a year-end report with recommendations for adjustments, additions, etc., to the training, and a report on the needs of each group relative to becoming self-funded in the future (month 12).*

**Task II. Watershed Computer Modeling and Monitoring.** The District presently coordinates an extensive volunteer monitoring program based on protocols and Quality Assurance Plans developed jointly with other groups: the San Francisco Estuary Institute (SFEI); the Region II Water Quality Control Board; and the Coyote Creek Riparian Station, among others. The program is intended to generate data in a form and presentation that will provide support to other, larger scale programs such

as the Regional Monitoring Program (RMP) and the Interagency Ecological Program (IEP), in addition to being available and useful to local neighbors such as the Southern Sonoma County RCD and other North Bay Forum participants. The monitoring program is constructed to be GIS adaptable, in order to present monitoring data spatially as well as temporally. The District presently uses MS Access to enter and store data, and uses pcArc/Info, ArcView, and Spatial Analyst for presentation and analysis. Models in use for watershed planning and management at the District include MIKE 11, an unsteady flow model for river and estuarine channels, and the U.S. Army Corps of Engineers Hydrologic Engineering Center tools HEC-1, HEC-2, and HEC-RAS.

**Task IIa:** Hold a minimum of one training session for each new Stewardship group in physical stream assessment techniques.

**Task IIb:** Gather geomorphological, permeability/runoff and flow data for at least two large tributaries with restoration potential, in order to add them to the MIKE 11 Napa River model.

**Task IIc:** Survey longitudinal and cross section data for the added tributaries, including horizontal position of the cross section points. This will be done by staff and volunteer labor using protocols developed by the RCD and based on USFS methods, with a licensed surveyor providing the elevation control points.

**Task IId:** Select stream gages from the Napa City/County ALERT gage system that are suitably located with respect to the tributaries identified and determine provisional rating curves (stage-discharge) to derive storm hydrographs for modeling purposes, based on flows observed October 1997 – April 1998.

**Task IIf:** Construct an enlarged MIKE 11 model, including the new tributaries, with historical data. Coordinate with the North Bay Modeling Group to ensure compatibility with watershed and outlet marsh modeling of the slough system at the outflow of Napa River and Sonoma Creek.

**Task IIg:** Utilize the model to estimate the effects of different enhancement scenarios on flow stability and channel capability to handle large and extremely small flows, with emphasis on those projects selected under Task III, below.

**Task IIh:** Using available data and available MIKE 11 modules, develop a pilot non-cohesive sediment transport model for one newly modeled tributary. Identify measurement needs for non-cohesive sediment loads in the tributaries selected, for implementation in years 2 and 3.

**Task IIi:** Design and establish an electronic interface for retrieval of monitoring data for use by constituents and partner agencies in planning and management decision making. This task will formalize an existing informal data sharing among the City of Napa, County of Napa, and District, as well as for individual landowners. The accessible database will publish only data with quality control programs in place and will be compatible with other data sources such as the IEP center and other regional monitoring programs.

**Products:** *Relational database for monitoring data, with a dynamic query capability (month 9); enlarged, calibrated MIKE 11 model of the Napa River with tributaries (month 9); report outlining results of modeling study of restoration sites and recommendations for program to measure sediment load in tributaries (month 12).*

**Task III: Riparian Corridor and Aquatic Habitat Restoration.** In partnership with other programs in the watershed such as the USDA Wetlands Reserve Program and EQIP and the US FWS Partners for Wildlife, this segment will establish demonstration sites for levee setbacks from the River and tributaries; floodplain wetland restoration; and riparian corridor redevelopment (including exotic species removal) to decrease Pierce's Disease in grapevines. It will also provide support to develop demonstrations with willing landowners of spawning habitat restoration and stream restoration using natural processes.

**Task IIIa:** Develop criteria for selection of at least two demonstration sites to exhibit levee setbacks



and floodplain restoration. These criteria will be established by a Guidance Committee composed of representatives from watershed stewardship groups, Department of Fish and Game, Pierce's Disease Task Force, Flood Control and Water Conservation District, Napa County Land Trust, Friends of the Napa River, Napa Valley Grape Growers, Resource Conservation District, Napa-Sonoma Mosquito Abatement District, and the Region II Water Quality Control Board.

**Task IIIb:** Solicit requests from landowners in Stewardship watersheds for participation as a demonstration site, as described in Task IIIa, and select from among the applications a minimum of three demonstration sites, distributed about the Napa River watershed. If the sites chosen have relatively low budgets, additional sites may be selected by the Guidance Committee.

**Task IIIc:** In coordination with the cost sharing program established by the Flood Control and Water Conservation District using funds from the Watershed Assessment parcel tax, provide funds from a block grant of \$75,000 to augment cost sharing for landowners whose projects directly address the stressors and species of concern in the CALFED program. An eligibility form will be developed and submitted to CALFED for content approval before being circulated among the public for applications.

**Task IIId:** Integrate the demonstration projects into the monitoring network to specifically track the progress made in stabilizing banks, adjusting flood stage, wetland development, morphological adjustments, spawning habitat change, and vegetation stabilization. In cooperation with the Department of Fish and Game, conduct fish species assessment at appropriate times during the year.

**Products:** *Guidance Committee criteria list (month 3) and application for cost sharing (month 3) and a separate criteria list and application for demonstration site selection (month 4); list of applicants for demonstration sites, and final selected sites (month 6); site development plans (month 8); as-built site descriptions for both cost share sites and demonstration sites (month 12); fish species assessment report (month 12).*

f. **Monitoring and Data Evaluation:** Monitoring for this project is to be combined with the existing monitoring program of the District and with other regional monitoring programs presently underway, including the SFEI and RMP programs. To the extent appropriate, the program will be developed to be compatible with the IEP monitoring effort in the Delta. The existing protocols and Quality Assurance Plan of the Napa River watershed monitoring program will be used to monitor the success of individual projects, in addition to overall watershed monitoring. Present parameters involved are water temperature, electrical conductivity, salinity in the lower River, erosion rates of bed and bank materials in tributary streams, vegetation change, bird inventories, fish habitat, stream flow rates and stage, rainfall, insolation, evapotranspiration, and benthic macroinvertebrates.

Data from the monitoring program is entered into an MS Access database for storage, report generation, and use in a pcARC/INFO GIS located at the District offices. Annually, an advisory team will assess the data and prepare a report on the status of the watershed. The team will be made up of local interest groups such as the Audubon Society and Friends of the River; local agency personnel from the Flood Control and Water Conservation District, Agricultural Commissioner's Office, and Mosquito Abatement District; state agency personnel from the Department of Fish and Game and the Regional Water Quality Control Board; and federal agency personnel from the USDA NRCS and U.S. EPA. This report will be made available for general distribution through the media developed in Task IIh. It will also be available to community members working on the next edition of the Napa River Watershed Owner's Manual.

g. **Implementability:** Most of the work done in this project will be outside of permit requirements, except for some of the demonstration site work and work done by landowners in the cost sharing program. Landowners and/or managers will be responsible for acquisition of all necessary permits for any given project that is part of this program. Streambed alteration agreements with the Department of

Fish and Game will be handled through the new pilot 1603.5 process established by the Legislature through the Watershed Planning Act of 1995. The pilot program applies to Napa County only, and is intended to evaluate the effectiveness of a watershed plan constructed by landowners and agencies to stand as a pre-approved streambed alteration agreement, provided that the landowner agrees in writing to Fish and Game to follow the plan as written and is proposing nothing that is not already considered in the plan development. Some of the projects will take place under the aegis of the Flood Control District cost sharing program and will follow the guidelines and rules established for it. Projects that may require Clean Water Act 404 permits will only be undertaken if the project qualifies for one of the nationwide permits presently authorized. Local Riparian and Floodway regulations and Conservation regulations requirements will be adhered to, with the assistance of the District and the Natural Resources Conservation Service. Any project that may fall under the jurisdiction of the Endangered Species Act will be handled as necessary through a Section 7 or Section 10 consultation, depending on site and project specifics. The District Board of Directors and counsel will investigate projects as necessary to determine categorical exemption status under CEQA guidelines. The District will work closely with the Napa County Land Trust to ensure that landowners wishing to transfer easements as part of their contribution will be able to do so through the Land Trust, or with Land Trust assistance.

It is anticipated that the demand for the services in this program will be quite high. The requests of District to provide these services presently is far beyond the capacity of present District staff to fully meet. The support from the community, from groups such as the Friends of the Napa River, and from individual landowners and managers in actively pursuing good watershed planning and management is considerable. The passage of a recent parcel tax specifically for watershed management is testimony to the interest and dedication to effective natural resource management. The District works closely with the County of Napa, the Flood Control District, all five municipalities, the Agricultural Commissioner, and other commercial and public interest groups to promote the recommendations contained in the Owner's Manual and to update the manual on a frequent basis based on monitoring and community feedback. In addition, the considerable amount of interest in the North San Pablo Bay wetlands has generated partnerships that support, and are supported by, the District and the Napa community. Other related partnership programs include a public access plan for the lower river with the County of Napa, the District, and the State Coastal Conservancy; the formation of a Coast Range Natural Area in the Putah and Cache Creek basins with Homestake Mine, individual landowners, UC Davis, this District, and the East Lake RCD; GEOSAR radar imaging program with the Department of Conservation, the Jet Propulsion Laboratory and the District; the USDA EQIP program with the District and NRCS; and the tidal marsh restoration project being planned by the Napa/Sonoma Marsh Complex Restoration Committee.

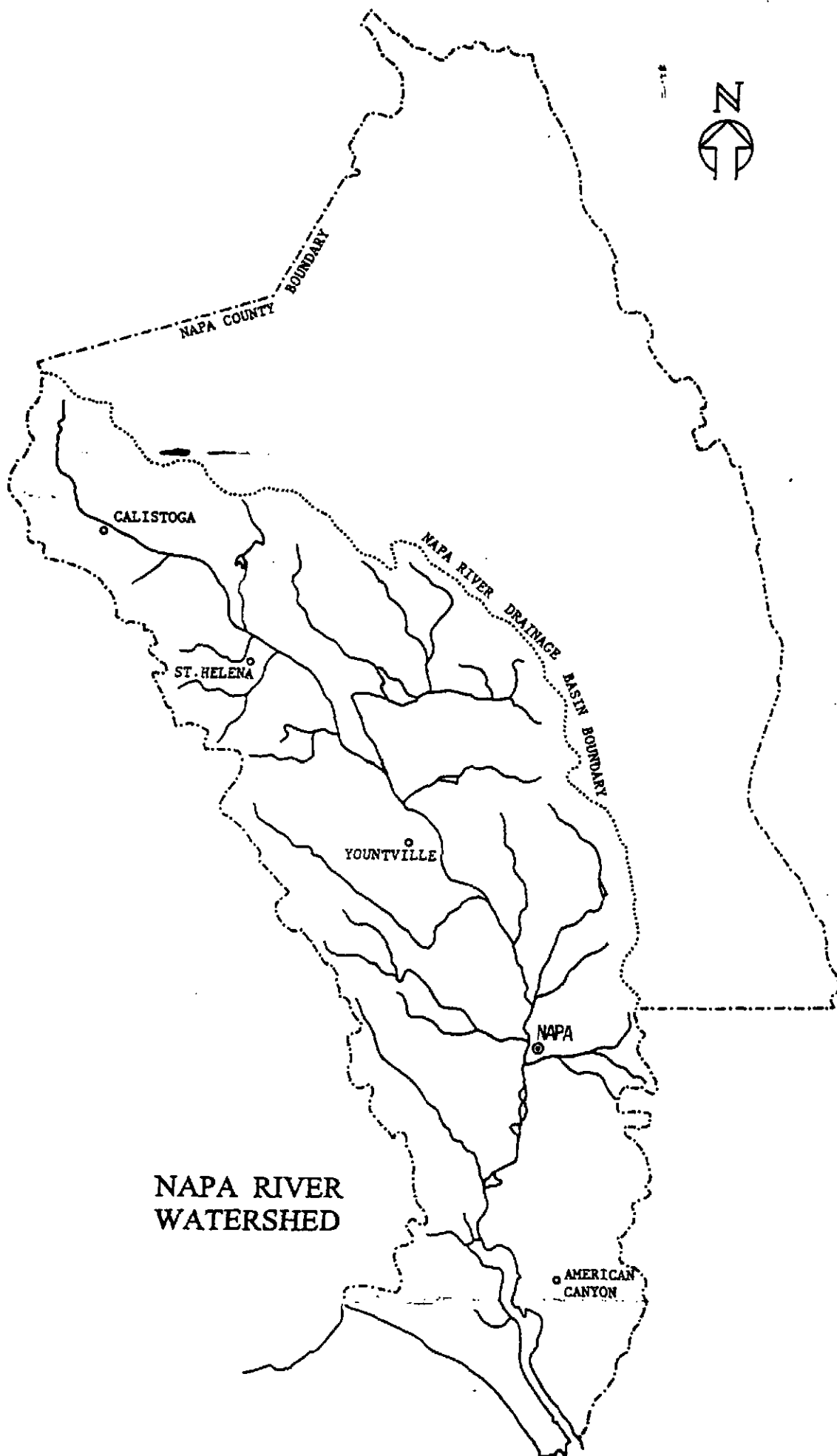
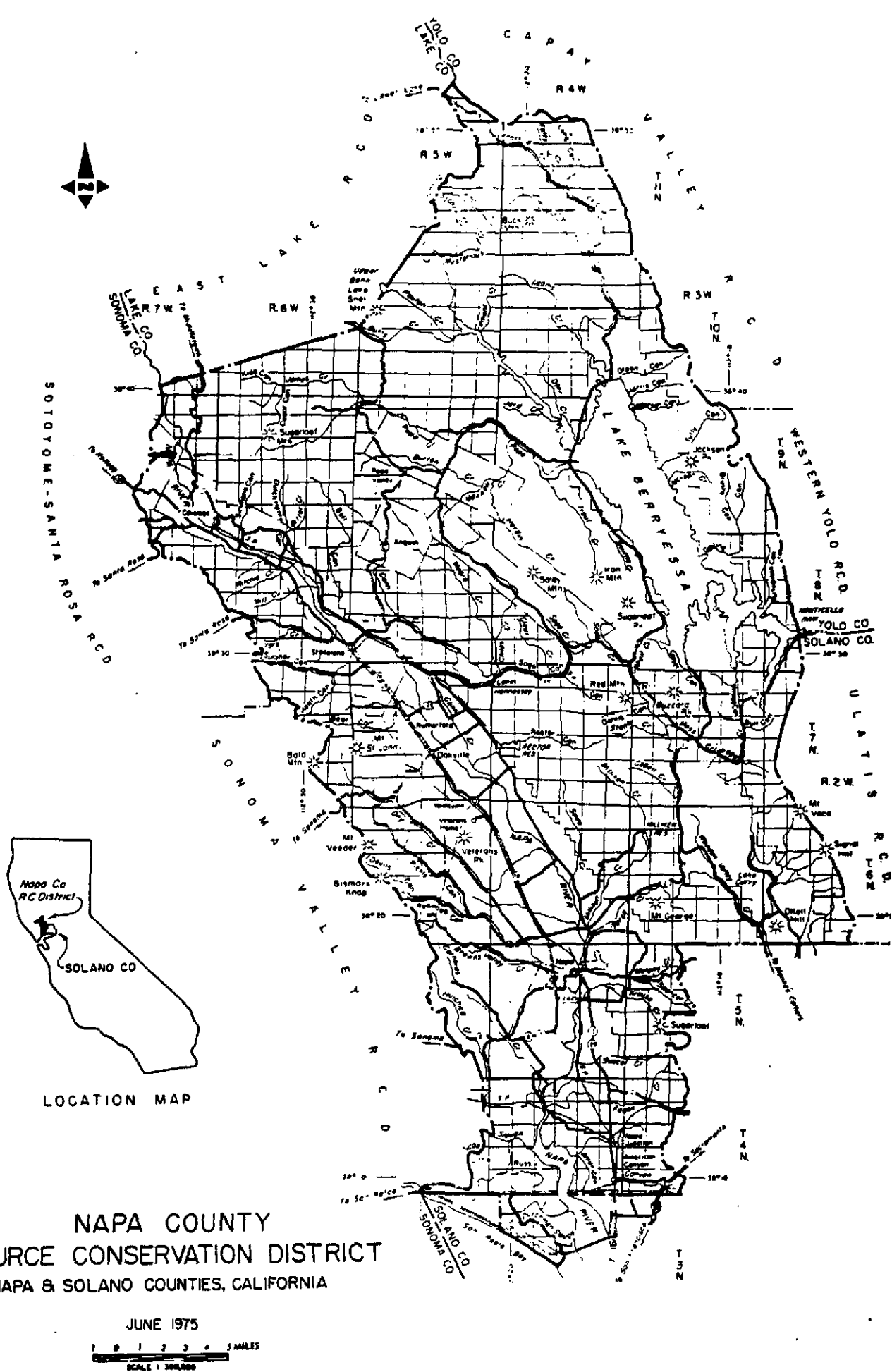


Figure 1. Map of Napa River Watershed  
Napa County Resource Conservation District, 1997 Category III CALFED Proposal - 07/24/97



**Figure 2. Map of Napa County Resource Conservation District.  
Napa County Resource Conservation District, 1997 Category III CALFED Proposal - 07/24/97**

#### IV. Cost and Schedule for Implementation

##### a. Budget Costs

Phase 1 Task Budgets	Direct Labor Hours	Direct Salary and Benefits	Administration	Material Costs	Other Direct Costs	Total Cost
-I: Stewardship -						
CALFED	*6,560	\$107,200	\$3,000	\$7,000	\$5,000	\$122,200
District	2,080	41,600	1,000		2,000	44,600
Other support	1,200	15,000		5,000		20,000
-II Modeling/Monitoring -						
CALFED	3,000	75,000	5,000	3,000	**7,000	90,000
District	2,080	52,000	2,000	8,000	2,000	64,000
Other support	144		2,000	4,000		6,000
-III Restoration -						
CALFED	750	15,000	15,000	\$105,000		135,000
District	1,040	18,700	2,000			20,700
Other support	4,160	74,880		105,000		179,880
<b>Total Project Budget</b>	<b>21,014</b>	<b>\$399,380</b>	<b>\$30,000</b>	<b>\$237,000</b>	<b>\$16,000</b>	<b>\$682,380</b>
<b>TOTALS</b>						
CALFED	10,310	\$197,200	\$23,000	\$115,000	\$12,000	\$347,200
District	5,200	\$112,300	5,000	8,000	4,000	129,300
Other support	5,504	\$89,880	2,000	114,000		205,880

\*includes 4160 hours @ \$20 per hour for two facilitators, and 2400 hours @ \$10.00 per hour for local coordinators

\*\*includes data transfer costs and software upgrades for model and GIS

Estimates for second and third year needs (Phase 2 - not a part of this application):

Phase 2 Task Budget (years 2-3, total)	Direct Labor Hours	Direct Salary and Benefits	Administration	Material Costs	Other Direct Costs	Total Cost
-II Stewardship -						
CALFED	3,120	\$62,400	\$1,500	\$3,000		\$66,900
District	2,080	41,600	\$1,000	2,000	5,000	49,600
Other support	1,800	21,600		500		22,100
-II Modeling/Monitoring -						
CALFED	2,400	60,000		1,000		61,000
District	3,120	78,000	2,000	1,000	2,700	83,700
Other support	260	3,120		3,000	500	6,620
-II Restoration -						
CALFED	750	15,000	5,000	75,000		95,000
District	1,040	18,700	4,000		1,000	23,700
Other support	4,160	74,880		110,500		185,380
<b>Total Phase 2 Budget</b>	<b>14,570</b>	<b>\$375,300</b>	<b>\$13,500</b>	<b>\$196,000</b>	<b>9,200</b>	<b>\$594,000</b>
<b>TOTALS</b>						
CALFED	6,270	\$137,400	\$6,500	\$79,000		\$222,900
District	6,240	138,300	7,000	3,000	8,700	157,000
Other support	3,100	99,600		114,000	500	214,100

"Other support" will be supplied by the collaborators listed in the first section of this proposal, and will be in the form of in-kind services, personnel hours, and materials and equipment use. Existing District programs already funded which will be supportive of this three-year program include a \$35,000

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stakeholder training and education grant from the US EPA; \$84,000 from CWA Section 319 funds for volunteer monitoring support and training; \$63,000 from the Department of Conservation for watershed radar mapping, watershed modeling and GIS development; and \$105,000 from CWA Section 319 funds for riparian restoration in the Huichica Creek watershed.

b. Schedule Milestones: Schedules for delivery of milestone products associated with key elements of each of the three segments of this proposal (*Stewardship Watershed Management*, *Watershed Computer Modeling and Monitoring*, and *Riparian Corridor and Aquatic Habitat Restoration*) are listed at the end of each segment description under "Proposed Scope of Work."

c. Third Party Impacts: No direct third party impacts are anticipated from the implementation of this project, as described in the RFP.

V. Applicant Qualifications: Brief biosketches of key personnel are listed below.

**Dennis Bowker, Resource Conservationist, Napa County Resource Conservation District**  
***Proposed role in Napa River Watershed Stewardship Project: Project Manager***

**Highlights of work at the District:**

- Co-facilitated the Huichica Creek Stewardship with Phillip Blake, Natural Resources Conservation Service (NRCS). The Huichica Creek Stewardship was selected by the U.S. Senate as one of nine model watershed management programs in the country.
- Developed Land Stewardship Watershed Management training program.
- Assisted with development of watershed training program with U.S. EPA OWOW through the U.S. Office of Personnel Management training center in Lancaster, PA.
- Worked as a training and watershed program facilitator for the Arizona Dept. of Environmental Quality, Hawaii Dept. of Health, Rhode Island NRCS, West Virginia NRCS, Massachusetts Dept. of Environmental Quality, and U.S. EPA Regions I and IX.
- Developed and delivered training programs for State Water Resources Control Board for CZARA and non-point source programs.
- National Wetlands Award from Environmental Law Institute and EPA.
- Hal Wise award from Region IX, U.S. EPA.
- Principal editor of Napa River Watershed Owner's Manual.

**Kathleen Edson, Program Coordinator, Napa County Resource Conservation District**  
***Proposed role in Napa River Watershed Stewardship Project: Administration and Monitoring Coordinator***

**Highlights of work at the District:**

- Project Manager for Teaching Resources Exchange Program (TREX) since beginning of EPA 319 grant in 1995 (Region II Water Quality Control Board, Leslie Ferguson Contract Mgr., tel: 510-286-0428). TREX is implementing recommendations from the Napa River Watershed Owner's Manual. Major parts of the TREX program are the Napa River Watershed Volunteer Monitoring Program, Stewardship development, and the AmeriCorps Watershed Project. Responsibilities include budget management and billing, volunteer coordination and training, report production, and monitoring protocol development.
- Volunteer coordination and general administrator for District office.
- Assisted in production of Owner's Manual.
- Coordinator for Napa Creek Clean-up (with City of Napa).

**Ellie Insley, Stewardship Facilitator, Napa County Resource Conservation District**  
***Proposed role in Napa River Watershed Stewardship Project: Stewardship Facilitator***

**Highlights of work at District:**

- Stewardship Facilitator for watershed groups in Napa County. Facilitated the start-up and development of goals and objectives of 4 new stewardship groups. Facilitate the activities of an additional 4 ongoing groups.
- Coordinate educational programs within stewardship groups to inform residents about the natural systems in their watershed and their effects on those systems. Train volunteers to implement watershed inventory and monitoring protocols.
- Assisted in development of Napa River Watershed Volunteer Monitoring Program: protocol

development and implementation.

- Organized and edited the Integrated Pest Management Field Handbook for Napa County, printed in 1997, working with the Napa Sustainable Winegrowing Group.

**Previous relevant experience:**

- Facilitated the start-up of the Mill Valley Watershed Project, a community-based project to increase watershed awareness and enhance salmonid runs in Mill Creek.
- Developed and coordinated the Wildcat Creek Water Quality Monitoring Program in Richmond, CA in partnership with the Wildcat Creek Watershed Council. The successfully completed program was funded by an EPA 319 grant (Region II Water Quality Control Board, Wil Bruhn Contract Mgr., tel: 510-286-0838). Trained volunteers in watershed awareness and water quality monitoring, and developed baseline data for use in further studies of the watershed.

**Ann Buell, Watershed Program Facilitator, Napa County Resource Conservation District**

***Proposed role in Napa River Watershed Stewardship Project: Geographic Information Systems (GIS) Specialist and Data Management Coordinator***

**Highlights of work at the District:**

- Developed GIS for Napa River Watershed Volunteer Monitoring Program and for other District projects: solicited and received existent GIS data layers from private and public sources, and created original GIS data layers for District.
- Expanded District GIS software capabilities through donations from ESRI (Environmental Systems Research Institute, Inc.): ArcView 3.0 upgrade, ArcView Spatial Analyst extension, and ArcView Network Analyst extension.
- Upgraded and networked office computer system.
- Assisted in development of Napa River Watershed Volunteer Monitoring Program: protocol development and implementation, and training of volunteers.
- Designed relational database for Volunteer Monitoring program (MS Access).
- Represent the District to the local community through slide presentations and presence at fairs.

**Previous relevant experience:**

- Inventoried riparian vegetation on 11 streams in the eastern Sierras for Center for Conservation Biology (Stanford University).
- Published two vegetation-related papers in referred journals (*Conservation Biology* and *Madroño*).
- Worked as an educator (English) in public and private programs and universities for ten years, including three years as a teacher trainer (one year as Fulbright Junior Lecturer).

**Bob Zlomke, Hydrologist, Napa County Resource Conservation District**

***Proposed role in Napa River Watershed Stewardship Project: Hydrologist***

**Highlights of work at the District:**

- Coordinated Napa River survey, 1995/96 (142 cross sections covering entire main stem of river above Trancas Street, with level control).
- Trained volunteer surveyors and developed spreadsheet applications for survey data entry.
- Developed computer programs to reduce survey notes and format them for model input.
- Developed Napa River model using Mike 11 software, 1995-96.
- Assisted Napa County Flood Control District staff with ALERT system stream gage placement



and planning, 1996-97.

- Carried out pilot work of floods on Napa Creek system using HEC-1 with Napa City ALERT system data, 1997.
- Expanded RCD modeling capabilities by the acquisition of new software programs from DHI and others.
- Developed preliminary modeling plans for Napa Marsh restoration, in cooperation with California Department of Fish and Game.
- Developed experimental plans to evaluate the usefulness of GeoSAR radar data for hydrologic modeling purposes; District experiments are currently underway, linking hydrologic models with GIS tools in floodplain modeling.
- Prepared flow estimates for sub-watersheds of Napa River, using aerial photographs, maps, and NRCS program TR-55, 1993.

**Previous relevant experience:**

- Wrote course materials and adapted computer models for estuarine modeling course, Mare Island Project.
- Assisted students in probabilistic systems analysis as Teaching Assistant in Civil Engineering, U.C. Davis, 1993-95.
- Authored *Water Quality Modeling in the Sacramento-San Joaquin Delta*, Center for Environmental and Water Resources Engineering, Department of Civil and Environmental Engineering, University of California, Davis, Report No. 95-1, February 1995.

**Julie Haas**, Assistant Hydrologist, Napa County Resource Conservation District

***Proposed role in Napa River Watershed Stewardship Project: Assistant Hydrologist***

**Highlights of work at the District**

- Surveyed cross-sections of Huichica Creek.
- Conducted fish habitat survey on Dry Creek.
- Derived modeling parameters from air photos and USGS quad sheets for use in hydrologic modeling using HEC-1, as part of a current experiment using GeoSAR radar data.

**Previous relevant experience:**

- Completed a riparian vegetation investigation of the Shasta River basin, and monitored water quality on the Klamath and Shasta Rivers. Managed and analyzed the data generated.

## **VI. Compliance With Standard Terms and Conditions**

We have in place all policies necessary to meet the requirements to comply with state and federal funding. We agree to the terms and conditions as set forth in Attachment D, Table D-1 of the RFP. We will submit appropriate forms at the time of contract completion, as per Attachment D, Table D1 of the RFP.

# APPENDIX

# Napa River Watershed Owner's Manual

## SUMMARY AND INTRODUCTION

This manual is a collection of recommendations from the Napa County Resource Conservation District that have been developed with the advice and participation of community representatives; federal, state, and local government agency representatives; private citizens; and local citizen interest groups. Where possible, specific practices are listed that may be adopted by landowners and managers. Because there is usually more than one way to pursue any given land use, the practices include many alternatives from which to choose, dependent on specific site conditions and personal preferences. In many cases, the recommendations are to fill gaps in existing information to help develop additional practices to help the citizens of the Napa River watershed maintain a healthy, sustainable natural resource system. It is designed to be flexible, and will be updated as new information and new techniques become available. The recommendations in this manual are intended for use as a technical and educational resource for landowners and managers in the watershed who want to help ensure the long term protection of the soil, water, and other natural resources of the watershed.

The recommendations in this Manual will be reviewed for effectiveness and completeness during the next two years, including public workshops and forums to provide the widest participation possible. Implementation assistance such as funding and technical assistance will be sought to supplement the local effort, and a thorough monitoring plan will generate needed information to maintain a proper assessment of the effectiveness of implementation. With that information, adjustments can be made, and further recommendations can be developed to help maintain the health of the watershed for the use and enjoyment of future generations.

### Voluntary, cooperative resource conservation

Historically, natural resource management planning has been done based on one resource only, or to deal with a single problem. This plan is an attempt to begin integrating the many parts of the watershed through recommendations for land use practices and programs developed with the complexity of the system in mind. Stated problems are presented as interests to be

addressed, rather than as the purpose of planning. Voluntary implementation of the recommendations in this plan will not only help deal with identified problems, but will prevent others from occurring. Thus, this type of watershed planning is intended more as preventive maintenance than as an "after the fact" clean-up or mitigation program. Solutions to problems identified by citizens, agencies, public interest groups, etc., are more easily realized when problems are treated as interests to be addressed instead of positions to be defended. This plan is meant to provide the basis for a voluntary effort of the citizens of the Napa Valley to jointly address the concerns expressed while protecting and preserving their natural and community resources in an economically reasonable manner. As with personal health or home maintenance, preventive care is the least burdensome and least expensive way of keeping a watershed healthy. This manual provides a first step toward the mutual education within the community that will provide the basis for broad cooperative action. Community participation in development of a long term plan to manage and maintain the uniqueness of the Napa Valley will ensure that the positive attributes of the valley will persist for the constructive enjoyment of the citizens of Napa, and that elements that threaten that enjoyment will be recognized and avoided by cooperative action. Programs to expand long term planning will be introduced in the rest of the County in coming months, in order to allow the County as a whole to begin conscientious local management of its invaluable natural resources.

Several recent legislative and regulatory actions have noted the importance of the Napa River to the health and well-being of San Pablo Bay. Identification of the Napa River by the US Environmental Protection Agency and the San Francisco Bay Regional Water Quality Control Board as a priority pollutant contributor to San Pablo Bay has emphasized the need for proper management of the watershed to control sediment and other nonpoint sources of pollution in the watershed. In addition, the implementation of the Coastal Zone Management Act Reauthorization Amendments of 1990, and the State Nonpoint Source Pollution Management Program will address land management practices in the watershed in order to control pollutant loading (chiefly sediment) in

the River and San Pablo Bay. The National Pollutant Discharge Elimination System permitting requirements, and the programs proposed in the reauthorization of the Clean Water Act also address different land management practices in the watershed. Other programs and regulations such as the Comprehensive Conservation and Management Plan for the San Francisco Bay Estuary, Napa County Flood Plain and Riparian Ordinance, and the Napa County Resource Conservation Regulations emphasize the public desire to protect the natural resources on which the residents of Napa County so heavily depend. Many other regulations such as endangered species protection plans and agricultural pesticide use monitoring highlight specific areas of concern as well.

Each of these regulations and programs have an individual focus, frequently based on a demonstrated or assumed problem in the watershed. Some, however, conflict with one another because they do not take into account the complexity of a natural watershed system and the interaction of community systems within the watershed. Wetland and riparian corridor protection plans sometimes conflict with flood control efforts and insect vector control, for instance. This manual begins a process of finding solutions to such overlaps and conflicts by considering the interaction of each interest with other interests and programs. No amount of government funding or regulation can equal the effects of broad voluntary participation on the part of individuals in the effort to provide long term protection to the watershed's natural resource system.

### Plan Goals and Objectives

This integrated resource management plan is designed to accomplish the goal of maintaining a sustainable river ecosystem for the Napa River watershed. With increasing population and diversity of land use in the watershed, systems management becomes more necessary in order to decrease negative impacts of human activities and to increase the positive impacts. Economic vitality is necessary to enable the community to address and solve resource problems such as non-point source pollution, and maintaining a healthy natural resource base is necessary for sustaining economic vitality. In order to keep the system in balance, land use and land management decisions must be made with full knowledge of the likely long term results of those decisions. Establishment of a goal oriented management

program can prevent problems before they occur, and will result in much less expensive and much more efficient use of community energy.

Of the basic natural resources that make up a watershed, water is perhaps the most critical. The quality and quantity of water available to the community and its ecological system is important not only from an empirical standpoint, but also because the status of the water resource in a watershed is an excellent reflection of the health of the watershed in general. For this reason, two additional goals have been established that will enable the maintenance of a genuinely sustainable river ecosystem. These two goals are to increase water quality in the watershed, and to increase water quantity available for beneficial use of watershed human, plant, and animal communities.

The effort to attain the three listed goals will include programs to reach several listed objectives of the plan. These objectives are measurable milestones that will enable the community to track progress toward maintaining a natural balance in watershed resources. Most of the objectives are to promote and encourage practices and behavior that will support development of a healthy environment for the watershed. Education is therefore a major characteristic of this planning and management program. Education is desirable regarding not only the technological issues related to watershed management, but also social interaction that promotes more complete understanding of the respective needs of the citizens of Napa Valley. The nine objectives chosen for the program include:

- Promote stream stabilization using natural processes
- Promote contiguous habitat
- Increase biological diversity
- Increase migratory and resident fish habitat
- Coordinate natural resource protection and planning efforts
- Encourage land stewardship
- Reduce soil erosion
- Promote sustainable land use concepts
- Promote and improve water management

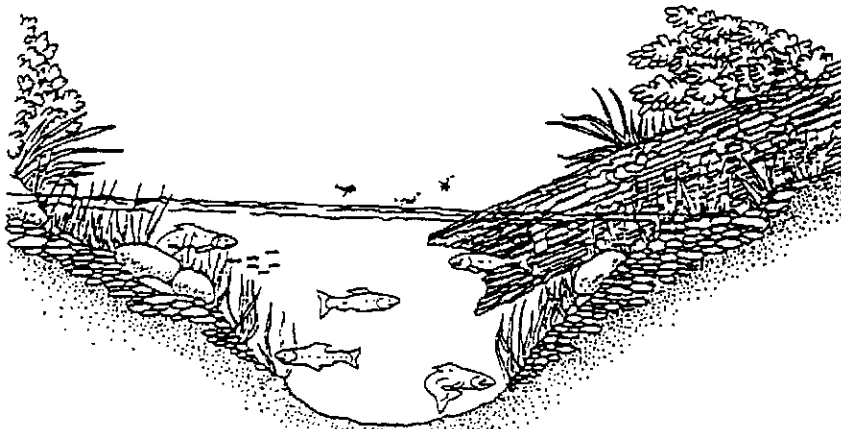
*This plan is meant to provide the basis for a voluntary effort of the citizens of the Napa Valley to jointly address public and private concerns while protecting and preserving their natural and community resources in an economically reasonable manner.*

## D. OBJECTIVE:

### INCREASE MIGRATORY AND RESIDENT FISH HABITAT

#### Background

A major indicator of the health of a river and its drainage system is the condition of its fish and other aquatic resources. Migratory fish such as steelhead trout and salmon are highly sensitive to unstable systems. Decreases in water quantity or quality, and siltation of spawning beds results in rapid decreases in fish numbers. An increase in fish numbers and species diversity, however, is indicative of a healthy system whose parts are working well in concert with one another. The Napa River has seen the extirpation of its native Silver salmon run in recent decades, and other species are in serious decline. They are not the only fish species affected by the condition of the watershed, however. Other estuarine species also are sensitive to changes to siltation patterns and vegetation, and rely on a stable estuary to provide spawning grounds and protection from predators. Water temperature; water availability; food sources; salinity levels; water clarity; and many other factors determine the ability of fish populations to thrive. In a very direct way, the status of migratory and resident fish habitat tells a great deal about the condition of the watershed. Thus, fish habitat quality and quantity is a reflection of the cumulative results of land use practices in the entire watershed. Healthy habitat increases recreational possibilities as well, and helps support the complex chain of aquatic food supply.



Reference: The Stream Scene Curriculum. Oregon Dept. of Fish and Game. 1992

Migratory and resident fish habitat may be increased in two ways. The first is by improving the condition of existing habitat, thereby allowing greater and more diverse populations of fish to survive. The second is by expanding habitat to include areas not presently capable

of supporting fish. Restoration of the Cargill salt ponds in the Napa Marsh is an example of habitat expansion. Some recommendations for increasing migratory and resident fish habitat include:

*D1. Increase habitat quality. One way to increase fish habitat is to make existing habitat more productive by increasing the quality of the habitat.*

D1.1. Manage urban storm water runoff to protect the quality of receiving waters: (See "L: Residential Land Use" and "M: Commercial, Industrial and Public Institutions" for more recommendations).

- a) stencil storm drains to alert residents to the direct inflow to the river from the drains
- b) sweep, rather than wash, paved areas to collect pollutants before they enter the river system
- c) encourage the use of permeable materials for parking lots, walkways, etc.

d) direct storm gutter outlets underground to provide percolation of rainwater through the soil.

D1.2. Landscape maintenance debris such as grass clippings and leaves should be composted and recycled in areas away from riparian zones.

D1.3. Implement practices that will control erosion and subsequent sedimentation from agricultural areas.

(for more recommendations, see "G: Reduce Soil Erosion" Objective, and "J: Agricultural" Land Use).

D1.4. Manage public access areas to restrict traffic impacts to small controlled and protected areas.

D1.5. Establish streamside buffer strips to filter runoff and provide shade.

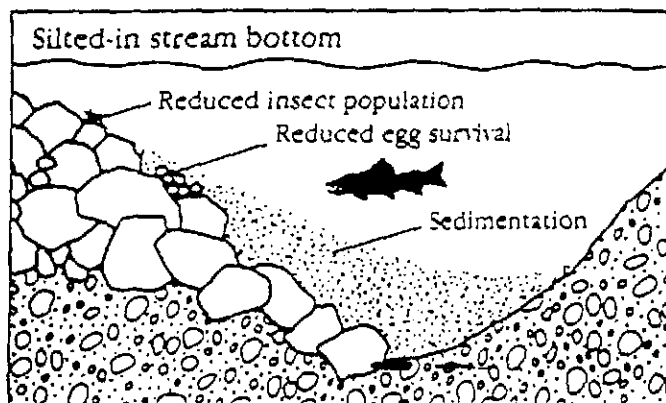
D1.6. Provide off stream watering areas for livestock.

D1.7. Filter runoff from confined animal facilities, including small horse pastures.

D1.8. Regularly inspect on site waste disposal systems (leach fields) to ensure proper functioning.

D1.9. Parks, golf courses, cemeteries and playing fields should adopt low pesticide and fertilizer use management techniques to eliminate tainted runoff into drainages.

- D1.10. Carefully measure all pesticides and fertilizers before use and follow label instructions for application, storage, and disposal.

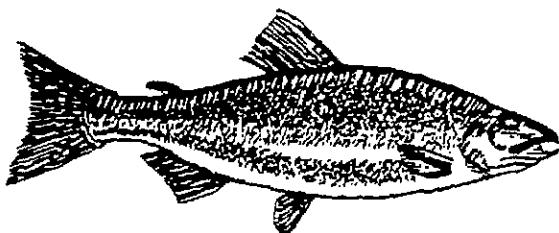


*Sedimentation greatly reduces habitat area and fish populations.*

Reference: Western Shasta Resource Conservation District

**D2. Increase habitat quantity.** A second means to increase fish habitat is to increase its spatial extent by construction of new habitat, or restoration of lost habitat.

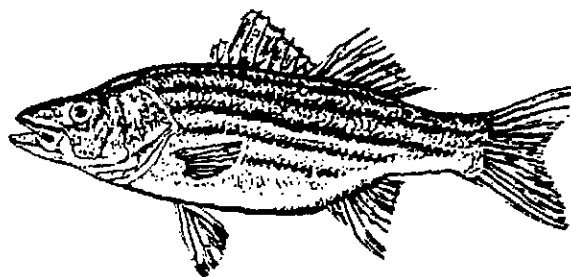
- D2.1. Instream structures should be altered where necessary to facilitate upstream migration of fish in order to provide access to more extensive spawning areas.
- D2.2. New instream structures should be built if necessary to allow upstream migration of fish. The floodplains of the river and its tributaries should be converted to appropriate wetland habitat where economically and scientifically feasible.
- D2.3. Use of wetland filters for dispersal of treated wastewater should be developed where appropriate.



- D2.4. Provide shading with riparian tree cover in presently unshaded reaches of the river and tributaries, in order to allow areas to become useable by fish.

- D2.5. New developments should utilize riparian areas as enhanced amenities, rather than as separated drainage channels as part of their open space development.
- D2.6. Where possible without increasing flood threat, flood control channel banks and drainage ditches should be vegetated to decrease evaporation and water temperature.

**D3. Data management and public outreach** Communication, education, and monitoring are critical aspects of systems management. More complete knowledge of watershed conditions allows more creative options for maintaining system balance. A community that has a high degree of awareness of the condition and trends of their watershed is better equipped and more likely to manage the watershed in a thoughtful, sustainable manner.



- D3.1. Increase public awareness of the status and importance of fishery health through news releases, articles, public speaking opportunities, and educational material distribution.
- D3.2. Assist the California Department of Fish and Game with salmonid inventories in the watershed, and publish the results in local news media.
- D3.3. Promote the establishment of local land stewardships in the subwatersheds, with special emphasis on salmonid habitat enhancement.
- D3.4. Include fish species data and habitat health assessments in the monitoring programs of the Riparian Stations.
- D3.5. Promote the use of small aquaria and live native fisheries in bilingual school classroom units.
- D3.6. Coordinate a common water quality monitoring network in the watershed.
- D3.7. Monitor gravel spawning bed status in stream channels:
- a) for excess sediment
  - b) for insufficient gravel (such as below impoundments)
  - c) for adequate gravel size distribution